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# Keywords and Glossary

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## Keywords

16QAM  
ALCAP  
antenna  
antenna tilt  
bandwidth  
bandwidth allocation  
beamforming  
Best-Effort scheduler  
bit rate calculation algorithm  
buffer management  
buffering  
CAC, call admission control  
CCTrCH  
Chase Combining  
CD-EDD algorithm  
cell planning tool  
C/I, carrier-to-interference ratio  
CMCC, Chain Mobile Communication Corporation  
CNB  
congestion  
congestion action  
congestion avoidance mechanism  
cross-layer backpressure  
decorrelation distance  
dimensioning  
EPC  
equalizer  
E-TFC  
fading, fast fading and slow fading  
feedback

**FIR**  
**FIR MIMO**  
**flow control**  
**flow control model**  
**Fourier transform**  
**handover**  
**HSDPA/HSUPA**  
**HS-DPCCH**  
**HS-DPPCH**  
**HSPA flow control**  
**HSPA Framing Protocol**  
**HSUPA**  
**inter-cell interference**  
**interference control**  
**intra-cell interference**  
**Iub flow control**  
**Iub interface**  
**Iur interface**  
**IWF**  
**Kaufman-Roberts formula**  
**link-level simulator**  
**link resource management algorithms**  
**MAC-ehs**  
**MAC-es**  
**MAC-hs**  
**MAC-i**  
**MAC-is**  
**MAI**  
**MIMO/SIMO**  
**multimedia traffic**  
**MU-MIMO**  
**NB**  
**near-far problem**  
**network coverage**  
**network upgrade**  
**non-serving cell**  
**notification**  
**Nyquist pulse**  
**OFDM**  
**opportunistic beamforming**  
**optimization**  
**optimization algorithm**  
**overprovisioning**  
**packet scheduler**

**packet scheduling**  
**PAG**  
**PCCPCH**  
**PCPICH**  
**PER**  
**performance evaluation**  
**power**  
**precoding**  
**propagation**  
**protocol structure**  
**PSCH**  
**radio bearer allocation**  
**RAKE receiver**  
**reasonable peak allocation**  
**Reed-Muller code**  
**RNL**  
**Round Robin scheduler, scheduling**  
**SAG**  
**SAP**  
**scheduler**  
**scheduling algorithm**  
**scheduling principles**  
**search algorithm**  
**serving cell**  
**signaled maximum flow bit rate**  
**simulated annealing algorithm**  
**simulation, link-level**  
**simulation, system-level**  
**simulation, system-level**  
**simulator, link-level**  
**smart antenna**  
**soft handover**  
**SS**  
**SSCH**  
**Subframe Number**  
**sum-capacity**  
**system-level simulation**  
**tabu search**  
**TF**  
**throughput**  
**time-space priority queuing**  
**TPC**  
**traffic model-based dimensioning**  
**transport network**

**transport network layer (TNL)**

**transport network overhead**

**Turbo code**

**UTRAN architecture**

**UTRAN functionalities**

**WSS-US model**

## Glossary

**3G:** 3rd generation

**3GPP:** 3rd generation partnership project

**AAL2/ATM:** ATM adaptation layer 2/asynchronous transfer mode

**ACK/NACK:** acknowledge/negative acknowledge

**AG:** absolute (scheduling) grant

**AGC:** automatic gain control

**AIAD:** additive increase/additive decrease

**AICH:** acquisition indicator channel

**AIMD:** additive increase, multiplicative decrease

**AM:** acknowledged mode

**AMC:** adaptive modulation and coding

**AMR:** adaptive multirate

**ARQ:** automatic repeat request

**ATM:** asynchronous transfer mode

**automated optimization:**

**AVI:** actual value interface

**AWGN:** additive white Gaussian noise

**BAC:** buffer admission control

**BE:** best effort

**BER:** bit error rate

**BLER:** block error rate

**BLER:** block error ratio

**BMA:** buffer management algorithm

**BS:** base station

**CA:** capacity allocation

**CACF:** capacity allocation control frame

**CATT:** China Academy of Telecommunications Technology

**CC:** congestion control

**CCDF:** complementary cumulative distribution function

**CCH:** common channel

**CCSA:** China Communications Standards Association

**CCTrCH:** coded composite transport channel

**CD-EDD:** channel-dependent earliest due deadline

**CDF:** cumulative density function, cumulative distribution function

- CDMA:** code division multiple access
- CF:** control frame chip equalizer
- CF:** control frame
- CFN:** connection frame number
- CLTD:** closed-loop transmit diversity
- CmCHPI (CmCH-PI, CmCHPi):** common transport channel priority
- CN:** core network
- CPICH:** common pilot channel
- CPS:** common part sublayer
- CQI:** channel quality indicator
- CRC:** cyclic redundancy check
- CRNC:** controlling RNC, radio network controller
- CS:** circuit switched
- Cwnd:** congestion window
- DAS:** distributed antenna system
- dB:** decibel, a logarithmic unit of measurement that expresses the magnitude of a physical quantity (usually power or intensity) relative to a specified or implied reference level.
- dBi:** a unit measuring the gain of an antenna
- dBm:** standard unit for measuring power levels in relation to a 1-milliwatt reference signal
- DCH:** dedicated channel
- DDD:** dynamic delay detection
- DDI:** data description indicator
- DF:** data frame
- DFD:** destroyed frame detection
- DFE:** decision feedback equalizer
- DL:** downlink
- DPCH:** dedicated physical channel
- DRNC:** drift RNC
- DRT:** delay reference time
- DS-CDMA:** direct sequence CDMA
- DT:** discard timer
- D-TSP:** dynamic time-space priority
- D-TxAA:** dual-stream transmit antenna array
- DWTPS:** downlink pilot time slot
- E-AGCH:** E-DCH absolute grant channel
- ECN:** explicit congestion notification
- E-DCH:** enhanced-dedicated channel
- E-HICH:** E-DCH Hybrid ARQ indicator channel
- EIRP:** effective isotropic radiated power
- E-PUCH:** E-DCH physical uplink channel
- ER scheduler:** exponential rule scheduler
- E-RGCH:** E-DCH relative grant channel

**E-RUCCH:** E-DCH random access uplink control channel

**Erlang capacity regions**

**ET gain:** early termination gain

**E-TSP (enhanced TSP):** enhanced time-space priority

**E-UCCH:** E-DCH uplink control channel

**EUL:** enhanced uplink

**EURANE:** enhanced UMTS radio access network extensions for NS-2

**EXP scheduler:** exponential rule scheduler

**F:** flag

**FC:** flow control

**FDD:** frequency division duplexing

**FER:** frame error rate

**FFT:** Fast fourier transform

**FFT scheduler:** fast fair throughput scheduler

**FIFO:** first-in, first-out

**FP:** frame protocol, framing protocol

**FSN:** frame sequence number

**FT scheduler:** fair throughput scheduler

**FWHT:** fast Walsh-Hadamard transformation

**GBR:** guaranteed bit rate

**GoS:** grade-of-service

**GPF scheduler:** generic proportionally fair scheduler

**G-RAKE receiver:** generalized RAKE receiver

**Gram-Schmidt procedure:**

**GRASP:** greedy randomized adaptive search procedure

**HARQ, Hybrid ARQ:** hybrid automatic repeat request

**HSDPA:** high-speed downlink pack access

**HS-DSCH (HSDSCH):** high-speed downlink shared channel

**HS-PDSCH:** high-speed physical downlink shared channel

**HS-SCCH (HSSCCH):** high-speed shared control channel

**HS-SICH (HSSICH):** high-speed shared information channel

**HSPA:** high-speed packet access

**IC:** interference control

**ICI:** inter-chip interference

**IE:** information element

**IR:** incremental redundancy

**ISI:** inter-symbol interference

**ITU:** International Telecommunications Union

**LAN:** local area network

**L-AWDF:** largest average weighted delay first

**LMMSE equalizer:** linear minimum mean square error equalizer

**LMMSE receiver:** linear minimum mean square error receiver

**LMMSE-ZF:** linear minimum mean square error zero forcing

**LNA:** low noise amplifier

- LPIC:** linear parallel interference cancellation
- LTE architecture:** long-term evolution architecture
- MAC layer:** medium access control layer
- MAC-d:** dedicated MAC
- MAC-e:** enhanced MAC
- MAP:** maximum a-posteriori
- Maximum C/I (Max-C/I)P:** maximum carrier-to-interference ratio
- MBMS:** multicast broadcast multimedia services
- MC-IDS:** multi-carrier independence scheduling
- MC-IS:** multi-carrier integrated scheduling
- MCS:** modulation and coding scheme
- MC-SS:** multi-carrier separately scheduling
- ME:** mobile equipment
- MFB:** matched filter bound
- MIAD:** multiplicative increase/additive decrease
- MIMD:** multiplicative increase/multiplicative decrease
- MIMO:** multiple-input, multiple-output
- MISO:** multi-input, single-output
- ML principle:** maximum likelihood principle
- MLPPP:** multi-link point-to-point protocol
- MLWDF, M-LWDF:** Modified Largest Weighted Delay First rule
- MMSE:** minimum mean square error
- MMSE-ZF:** minimum mean square error zero forcing
- MSWF:** multi-stage Wiener filtering
- MTU:** maximum transfer unit
- MUB:** multi-user beamforming
- MUD:** multi-user diversity gain, multi-user detection
- MUI:** multi-user interference
- MU-TxAA:** multi-user TxAA
- MU:** multi-user
- MUD:** multi-user diversity
- MUI:** multi-user interface
- MVU estimator:** minimum variance unbiased estimator
- N:** total queue capacity
- NACK:** negative ACK
- NBAP:** Node B application part
- N:** number of MAC-d PDUs
- Node-B (Node B):** base station
- NP-hard (NP-hardness):** refers to a class of computationally difficult optimization problems
- NRG scheduler:** normalized rate guarantee scheduler
- NRT:** non-real-time; near-real-time
- NRTV:** near-real-time video
- O & M:** operations and management

**OF:** orthogonality factor  
**OSIC:** ordered successive interference cancellation  
**OVSF:** orthogonal variable spreading factor  
**PARC:** per-antenna rate control  
**PCI:** precoding control indicator  
**PE:** polynomial expansion  
**PIC:** parallel interference cancellation  
**PCI:** precoding control indicator  
**PDF:** probability density function  
**PDU:** protocol data unit/packet data unit??  
**PE:** polynomial expansion  
**PF scheduler:** proportional fair scheduler, proportionally fair scheduler  
**PIC:** parallel interference cancellation  
**PICH:** paging indicator channel  
**PQ:** priority queue  
**PS:** packet switched  
**PS:** processor sharing  
**PSNR:** peak-signal-to-noise ratio  
**PSTN:** public switched telephone network  
**QAM:** quadrature amplitude modulation  
**QCIF:** quarter common intermediate format  
**QoE:** quality-of-experience  
**QoS:** quality-of-service  
**QPSK:** quadrature phase-shift keying  
**quality-of-service:** QoS  
**Queue ID:** Queue Identifier  
**R99:** 3GPP Release 99  
**RAB:** radio access bearer  
**RACH:** random access channel  
**RAD scheduler:** required activity detection scheduler  
**RAN:** radio access network  
**RF:** radio frequency  
**RG scheduler:** rate-guarantee scheduler  
**RG:** relative (scheduling) grant  
**RLC:** radio link control  
**RLC layer:** radio link control layer  
**RLC AM:** RLC acknowledged mode  
**RMF:** recommended modulation format  
**RMS:** root mean square  
**RNC:** radio network controller  
**RNS:** radio network subsystem  
**RoT:** rise over thermal noise  
**RR scheduler:** Round Robin scheduler  
**RRC algorithms:** radio resource control algorithms



- RRM:** radio resource management
- RSN:** retransmission sequence number
- RT:** real-time
- RTBS:** recommended transport-block size
- RTT:** round-trip time
- RV:** redundancy version
- RX:** receiver
- SAW:** stop-and-wait
- SB scheduler:** score based scheduler
- SCH:** synchronization channel
- SDMA:** spatial division multiple access
- SDU:** service data unit
- SF:** spreading factor, spread factor
- Shaper:** in the RNC, the Shaper shapes the arriving MAC-d PDUs according to the shaping
- SHO:** soft handover
- SIC:** successive interference cancellation
- SID:** size index identifier
- signal-to-interference plus noise ratio:** SINR
- SIMO:** single-input, multiple output; single-input, multi-output
- SINR:** signal-to-interference plus noise ratio
- SISO:** single-input, single-output
- SNR:** signal-to-noise ratio
- SPI:** scheduling priority indicator
- SR:** selective repeat
- SR-ARQ:** selective repeat automatic repeat request
- SRNC (Serving RNC):** serving radio network controller
- STTD:** space-time transmit diversity
- SU:** single user
- SUMF:** single-user matched filter
- TBS:** transport block size
- TCI CF:** TNL congestion indication control frame
- TCP:** transmission control protocol
- TDD:** time division duplexing
- TDMA:** time division multiple access
- TD-SCDMA:** time division duplex-synchronous code division multiple access
- TD-SCDMA DCH:** time division duplex-synchronous code division multiple access dedicated channel
- TD-SCDMA HSDPA/HSUPA:** time division duplex-synchronous code division multiple access high-speed downlink/uplink packet access
- TFC:** transmission format combination
- TFRC:** transport format and resource combination
- TNL:** transport network layer

**TSN:** transmission sequence number  
**TSP:** time-space priority  
**TTI:** transmission time interval  
**Tx window:** transmission window  
**TxAA:** transmit antenna array  
**UBS:** user buffer size  
**UDP/IP:** user datagram protocol/internet protocol  
**UE:** user equipment  
**UL:** uplink  
**UMTS:** universal mobile telecommunications systems  
**UP:** user plane  
**UpTPS:** uplink pilot time slot  
**USIM:** UMTS subscriber identity module  
**UTRAN:** UMTS terrestrial radio access network  
**Uu interface:** HSUPA air interface  
**Uu scheduler:** HSUPA air interface scheduler  
**VF:** version flag  
**VoIP:** Voice over IP, Voice over Internet Protocol  
**WCDMA:** wideband code division multiple access  
**WFQ scheduler:** weighted fair queuing scheduler  
**WHT:** Walsh-Hadamard transformation  
**ZF:** zero forcing